

CLAIMS

1. A non-aqueous electrolyte rechargeable battery comprising:

(a) a positive electrode capable of charging and discharging lithium;

(b) a negative electrode capable of charging and discharging lithium;

(c) a separator or a lithium ion conductive layer interposed between said positive electrode and said negative electrode; and

(d) a lithium ion conductive non-aqueous electrolyte, wherein

said positive electrode contains a mixture of a first positive electrode active material and a second positive electrode active material,

said first positive electrode active material comprises lithium oxide containing manganese, said lithium oxide further contains aluminum and/or magnesium and

said second positive electrode active material comprises $\text{Li}_x\text{Co}_{1-y-z}\text{Mg}_y\text{Al}_z\text{O}_2$ where $1 \leq x \leq 1.03$, $0.005 \leq y \leq 0.1$ and $0.001 \leq z < 0.02$.

2. The non-aqueous electrolyte rechargeable battery in accordance with claim 1, wherein said first positive electrode active material is $\text{Li}_a\text{Ni}_b\text{Mn}_c\text{Co}_d\text{M}_e\text{O}_2$ where M is Al and/or Mg, $1 \leq a \leq 1.2$, $0.3 < b \leq 0.5$, $0.3 < c \leq 0.5$, $0 < d < 0.4$, $0 < e \leq 0.1$ and $b + c + d + e = 1$.

3. The non-aqueous electrolyte rechargeable battery in accordance with claim 1, wherein said first positive electrode active material is $Li_aMn_bM_{2-b}O_4$ where M is Al and/or Mg, $1 \leq a \leq 1.2$ and $1.8 \leq b < 2$.

4. The non-aqueous electrolyte rechargeable battery in accordance with claim 1, wherein the content of said second positive electrode active material in said mixture is 10 wt% or higher.

5. The non-aqueous electrolyte rechargeable battery in accordance with claim 1, wherein an end-of-charge voltage in a normal operation state is set to 4.3 to 4.4 V.